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British entomology : being illustrations and descriptions of the genera of insects found in Great Britain and Ireland: containing coloured figures from nature of the most rare and beautiful species, and in many instances of the plants upon which they are found.

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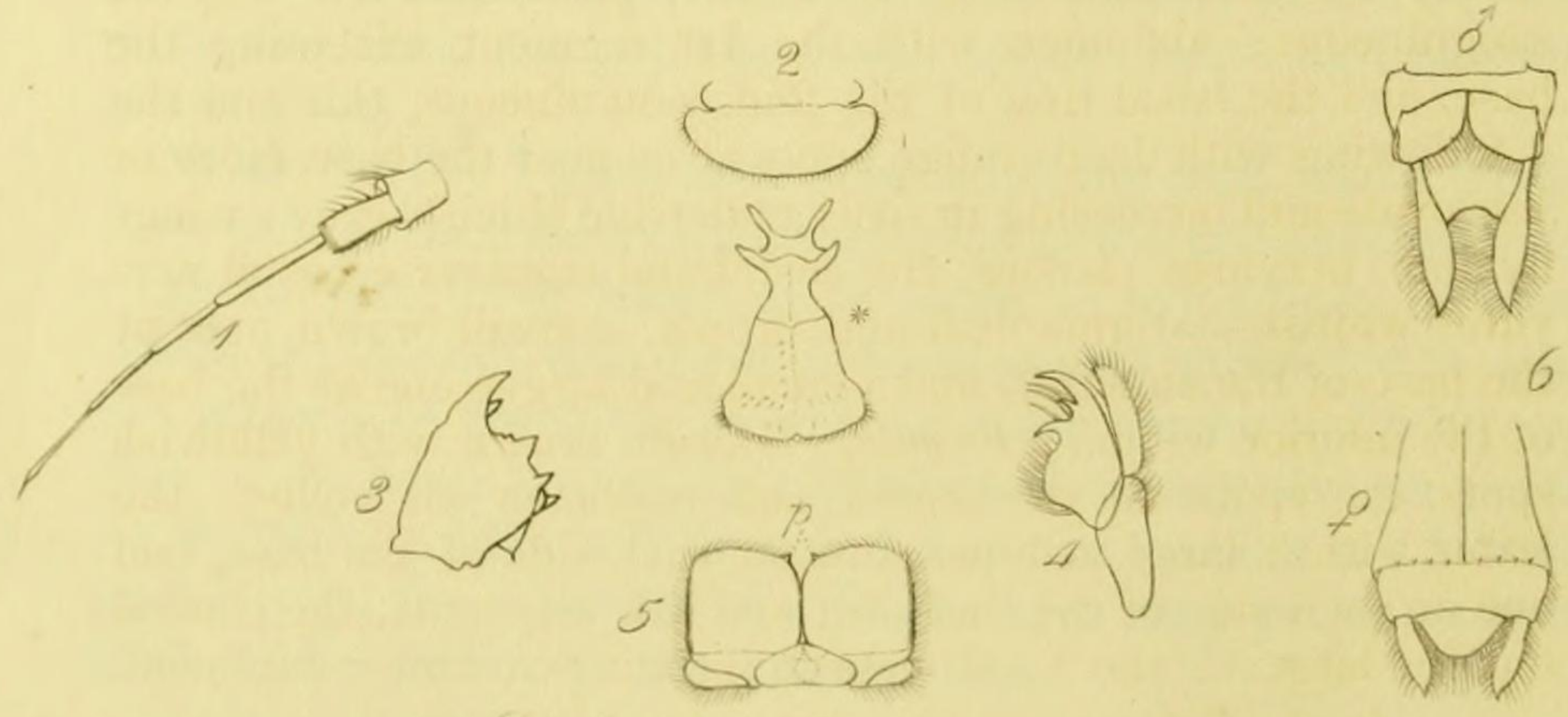
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Publ. by J. C. Smith, Col. 1. 1850

LIBELLULA RUBICUNDA.

ORDER Neuroptera.

FAM. Libellulidæ.

Type of the Genus, Libellula depressa Linn.

LIBELLULA Linn. &c.—Curt. Guide, Gen. 725.

Antennæ inserted on each side of a vesicle before the eyes, short slender setiform and 6-jointed, basal joint the stoutest, short and cylindrical, 2nd not so stout but a little longer and bristly, the remainder slender and setaceous, 3rd joint much the longest, 4th scarcely so long as the 2nd, 5th a little longer, 6th as long as the 3rd, acute at the apex and terminating in a bristle (1).

Labrum large, transverse, convex, semioval, bristly outside (2).

Tongue? subovate, dilated towards the apex and bristly (*).

Mandibles short and stout, deeply bifid at the apex, with a cluster of 4 or 5 short teeth on the inside (3).

Maxillæ with a short stipes, the terminal portion dilated at the base, rounded and bristly internally, the apex claw-shaped, with 2 smaller teeth below and 3 long stout spines on the outside, external lobe long curved and very bristly (4).

Mentum small. *Lip* very large and convex, formed of 2 quadrate orbicular lobes very bristly on the margins (5), with 2 minute teeth at the inner angle, opposite each other (*p*).

Head large, the base concave; eyes very large, meeting on the crown: ocelli 3, placed round a vesicle before the eyes. Thorax large and oblong. Abdomen moderately long, sometimes broad depressed and attenuated at the apex, with 2 horny lobes at the base in the males, and 2 moveable lobes at the apex (6 ♂); females with 2 shorter lobes at the apex (♀). Wings extended horizontally, alike in both sexes, inferior the broadest, especially at the base, very much reticulated, stigma elongated but short in some. Legs, anterior the stoutest, hinder a little the longest: thighs spiny on the inside: tibiæ slender, with 2 series of spreading acute slender spines on each side: tarsi short triarticulate, hinder the longest, basal joint the shortest, terminal the longest: claws cleft towards the apex.

Larva and Pupæ aquatic, short and broad, both furnished with legs for walking, similar to the imago. Roesel, v. 2. tab. 6. f. 1. 2.

RUBICUNDA Linn.—pectoralis Charp.?—dubia Vand. Lin.?

Male. Dull black, face and labrum yellowish-white: thorax with 2 deep orange stripes before the wings and several marks under them; the disc, including the scutel, postscutel and scapulæ sanguineous: abdomen with the 1st segment, excepting the base, and the basal ring of the 2nd, sanguineous, this and the 4 following with deep orange spots at or near the base, more or less ovate and increasing in size; underside blueish-grey: wings hyaline, nervures piceous, the costal and transverse costal nervures whitish; stigma oval and brown, a small brown spot at the base of the superior, and a small and larger one at the base of the inferior wings. *Female*. Labrum brown with yellowish spots, the spots on the thorax and abdomen all yellow, the latter with 3 large yellow spots on each side of the base, and one on each side of the 2nd, 3rd and 4th segments, the central one the largest: the basal spots on the wings are more extended.

In the Cabinets of Mr. Dale, the Author, &c.

LIBELLULA is one of the most extensive genera of this magnificent family of insects, which may be divided into 2 sections.

1. *Abdomen dilated and more or less depressed.*

1. *depressa* Linn.—Don. v. 3. pl. 81 ♂. v. 1. pl. 24 ♀.

Marshy places and ponds everywhere, from April to Aug.

2. *quadrinaculata* Linn.—Don. 12. 407.—Sam. pl. 7. f. 1.—*prænubila* Newm. var.

Ponds and woods, middle of May to August, Middlemarsh, Parley, New Forest, Oxford, Whittlesea and Meldon Park, Mr. Dale; also at Epping.

3. *bimaculata* Charp.? *Step.* June, Whittlesea Mere.

4. *conspurcata* Fab.—4-fasciata Don. 12. 425.

Hedges, lanes, &c., from middle of May to the middle of July, Parley, Glanville's Wootton and Newnham, Bedfordshire, Mr. Dale; Sprowston near Norwich and Deptford.

5. *cancellata* Linn.—Don. 14. 472.—*Int. to Ent.* pl. 3. f. 5. ♀.

Croydon canal, Peckham, Horning and Fakenham, Norfolk, Whittlesea Mere, Abbey Meadows, Kilburn, end of June to middle of August, J. C.

6. *Sparshalli* Dale's Mss. Taken at Horning in 1823 by the late Mr. J. Sparshall; it is very similar to a Chinese species.

2. *Abdomen triquetrous, sublinear or slightly clavate.*

7. *cœrulescens* F.—Donovani Lea.—*biguttata* Don. 13. 449 ♂.

May to September, Charmouth, Portland, Empole, Parley, Enborne, Gamlingay bogs and Isle of Man, Mr. Dale; New Forest and Black-gang-chine, J. C.

8. *vulgata* Linn.—Don. 10, 337. 1.

Ponds and ditches from June to 19th Nov. everywhere.

9. *Veronensis* Charp. Taken by Mr. Harrison of Hull.

10. *flaveolata* Linn.—Schaff. *Icon. t.* 4. f. 1.

Taken by Mr. Lyell at Kinnordy in Forfarshire, and by Mr. Doubleday last year at Epping in abundance.

11. *angustipennis* *Step. Ill.* June, near London.

12. *Roeselii* Curt.—*Roesel*, 2. pl. 8, f. 4.—*basalis* *Step.* ♀?
rufostigma New. var. Whittlesea Mere, Mr. Bentley.

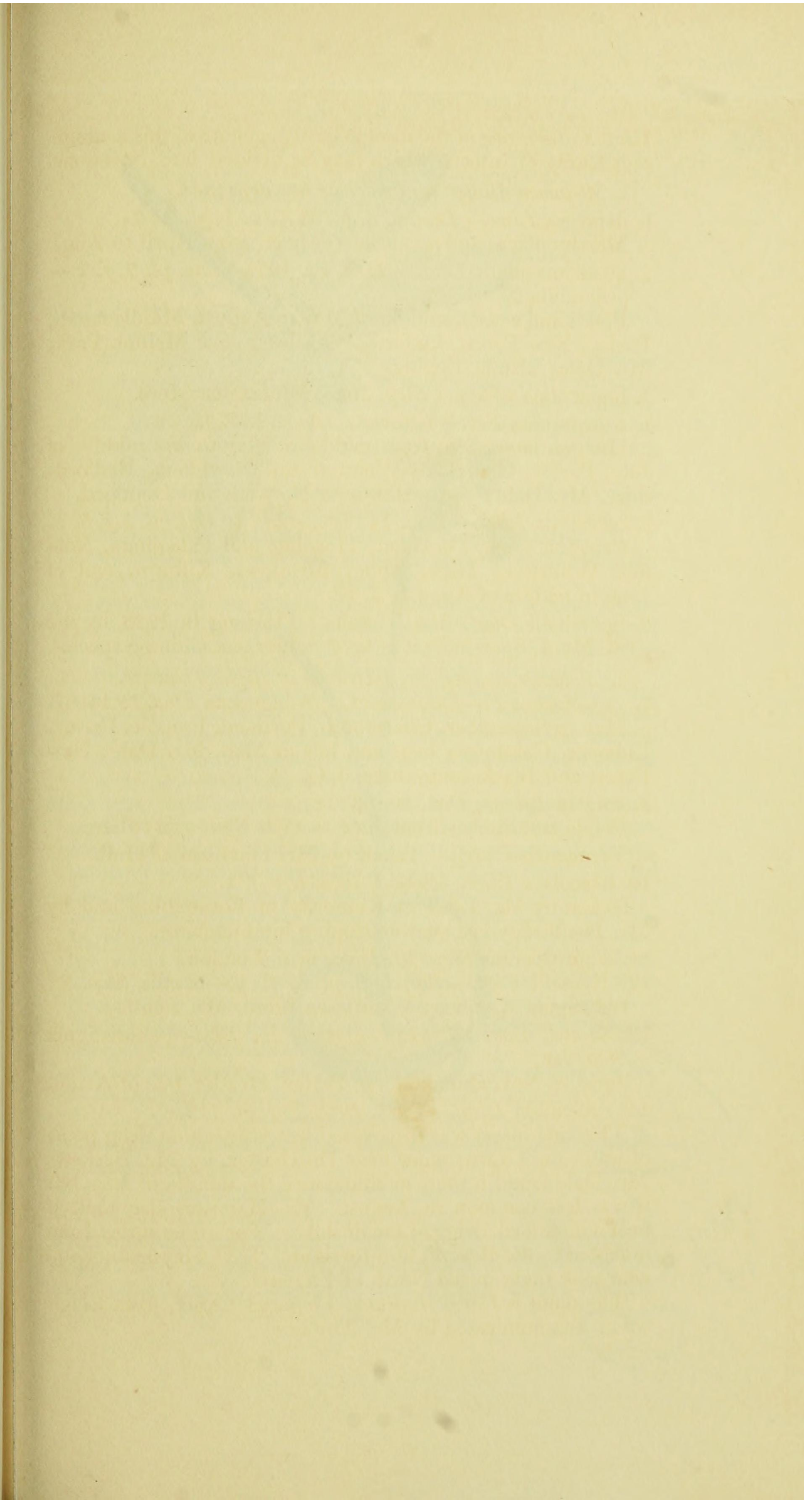
13. *Scotica* Don. 15. 523.—*nigra* Van. *Lin.*—*pallidistigma* *Step.* var.

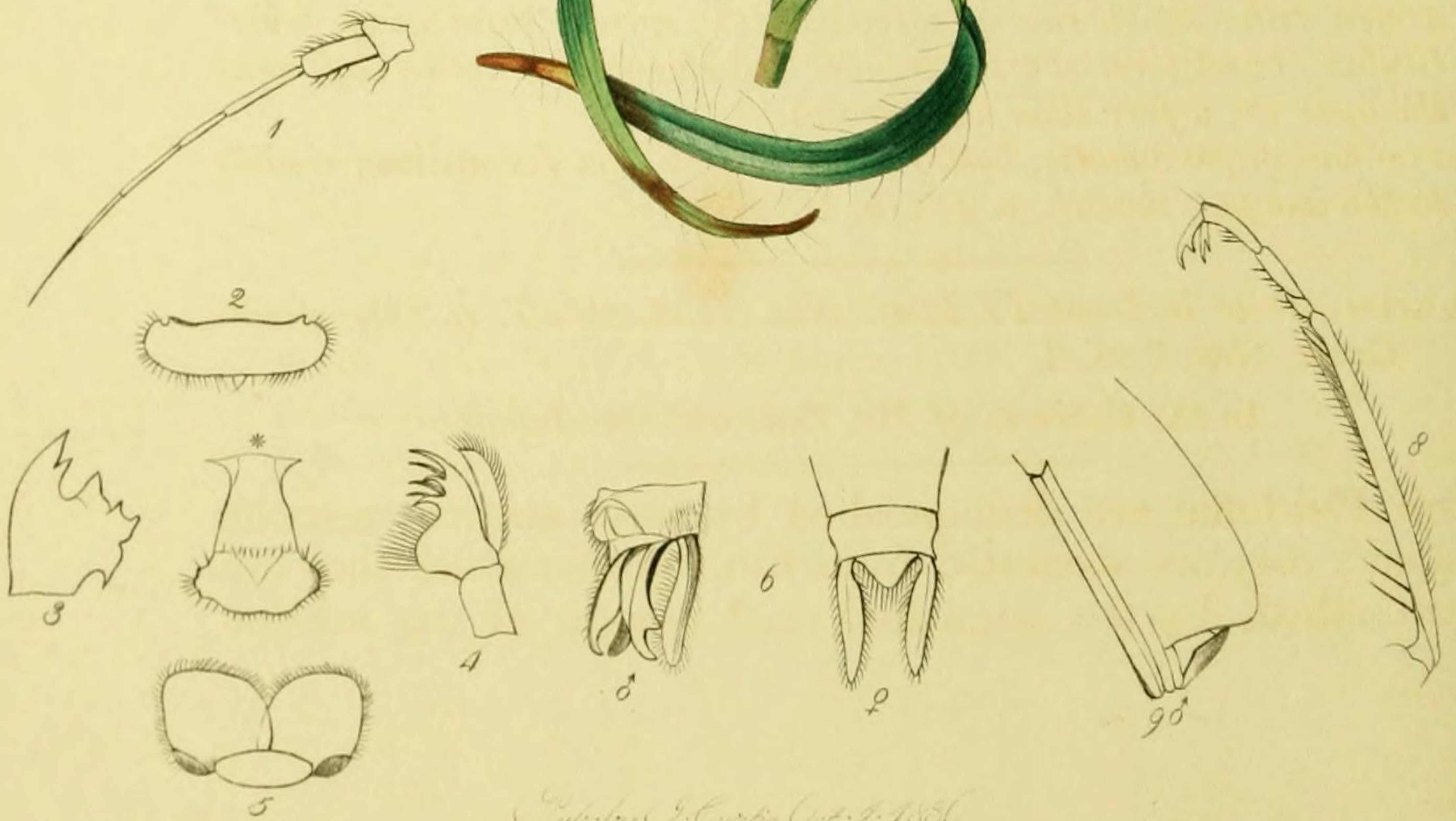
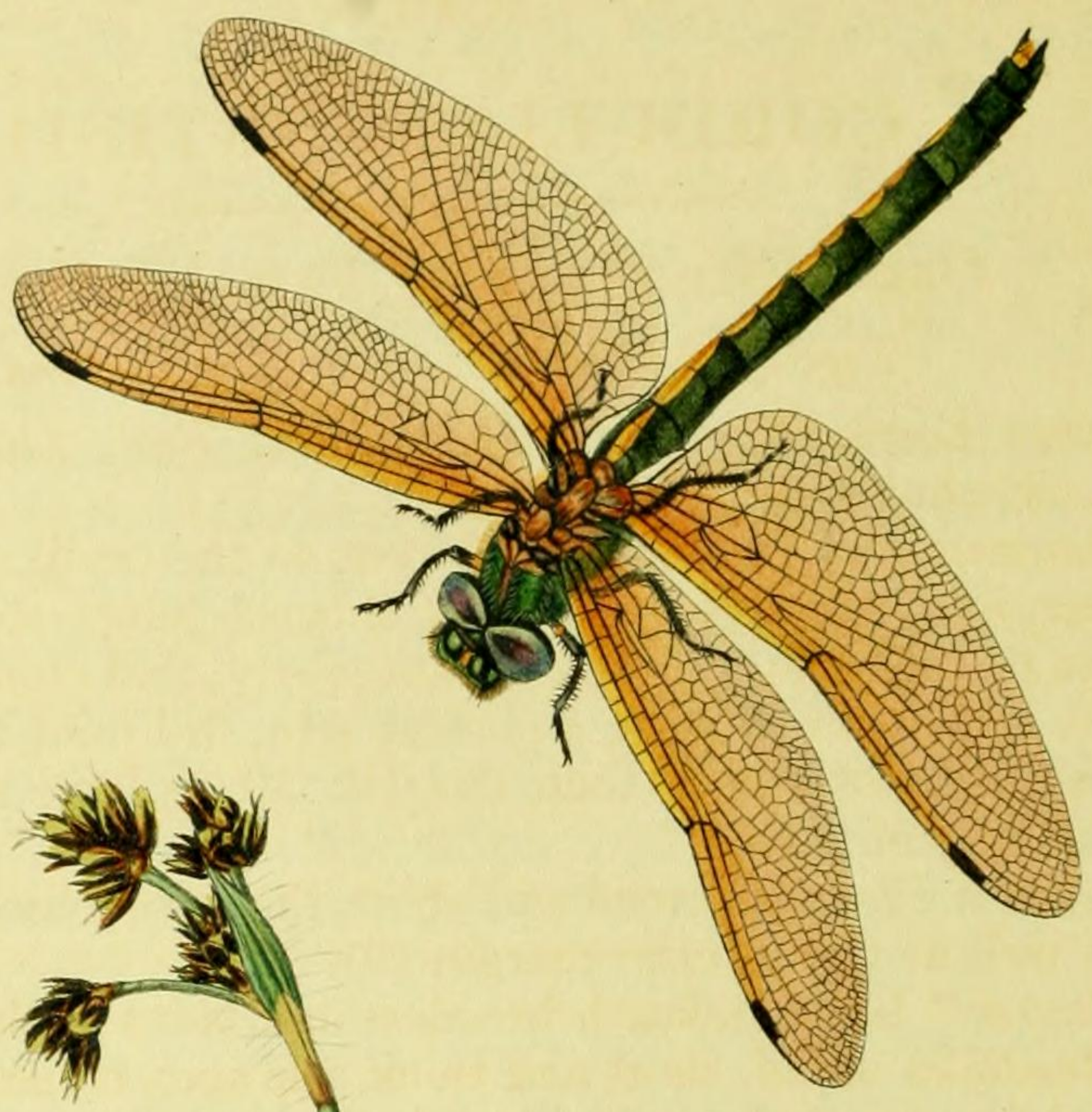
June to Nov. abundant on Parley Heath; Isle of Arran.

14. *rubicunda* Linn.—Curt. *Brit. Ent.* pl. 712. ♂.

This fine insect was discovered last year, about deep pools of water on Thorne moor near Dorchester, by Mr. Beckett; Mr. Dale found it there in abundance the middle of July, but it was less common in August; Mr. Harrison also took it near Glandford Brigg, Lincolnshire. For a fine series I am indebted to the Rev. F. O. Morris and T. C. Heysham, Esq., who took them in the North of England.

The plant is *Carex digitata*, Fingered Carex, from Leigh wood, communicated by Mr. Thwaites.





Pub. by J. Curtis Oct. 1. 1836

CORDULIA CURTISII.

ORDER Neuroptera. FAM. Libellulidæ.

*Type of the Genus, Libellula ænea Linn.*CORDULIA Leach., Curt.—Libellula Linn., Fab., Lat., Vand. Lind.
—Æschna Charp.*Antennæ* very small, inserted close to the ocelli on the anterior margin of the eyes, 6-jointed, 2 basal joints stout and hairy, 1st the shortest and dilated anteriorly, 2nd elongate cylindric, the remainder forming a slender seta, 3rd joint longer than the 2nd, 4th not longer than the 1st, 5th as long as the 2nd, 6th the longest (1).*Labrum* exerted, broad and short, the sides rounded and ciliated as well as the anterior margin (2).*Tongue* ? large, inflated, broadest and hairy at the apex (*).*Mandibles* broad, short and thick, the apex truncated obliquely, and forming 5 short sharp teeth (3).*Maxillæ* with the stripes short, terminated by a horny falcate lobe, dilated at the base and ciliated internally, with 6 elongated curved acute teeth at and below the apex, and a thick linear palpiform lobe outside, subfalcate and hairy externally (4).*Labium* very large and convex, entirely covering the mouth and concealing the trophi, excepting the labrum, trilobate, the lateral lobes very large, suborbicular, hairy, the internal margins crossing, central lobe smaller, transverse and covering a portion of the base of the others (5).*Head large, concave at the base: eyes very large meeting on the crown: ocelli 3? in a cavity in front of a vesicle before the eyes. Thorax large and ovate. Abdomen long cylindric or compressed, clavate, narrowed towards the base in the male with 2 spines beneath the 2nd joint and 4 appendages at the apex, the inferior ones furcate (6 ♂); but these are absent in the female (6 ♀). Wings nearly equal, extended horizontally, very much reticulated, stigma elongated; inferior wings with the anal angle acute in the male (9 ♂). Legs slender, anterior the shortest: thighs linear, serrated inside: tibiæ armed with a double row of spreading long spines: tarsi spiny, triarticulate, basal joint short, 2nd and 3rd elongated: claws cleft near the apex (8, a fore tibia and tarsus).**Larvæ and pupæ aquatic, both furnished with legs for walking similar to the imago. Roesel, v. 2. t. 5. f. 1.*CURTISII Dale in Loudon's Mag. Nat. Hist. vol. 7. p. 60.—Curt.
Guide, Gen. 726. 2.*In the Cabinets of Mr. Dale and the Author.*

THE Corduliæ are distinguished by their uniform metallic colour; they are separated from Libellula, to which they are most allied, by the angulated anal margin of the inferior

wings, and from all the other Dragon-flies by the small central lobe of the labium, as well as by the vesicle on the crown of the head.

The species of *Cordulia* are the following:

1. *metallica* *Vand. Lind. Mon.* 18. 13.—*Schæf. Icon. tab.* 113. *f.* 4. ♀.—*Roesel 2. Aq. II. tab.* 5. *f.* 2. ♂.—*Harris Expos. tab.* 27. *f.* 2. ♀.

Brassy-green, abdomen thickened in the middle, all the anal appendages in the male simple, acuminate; wings lutescent, stigma yellow.

This species is admitted as British on the authority of Vander Linden, who quotes Harris's figure as the male, but it is the female he has represented.

2. *ænea* *Linn.*—*Schæf. tab.* 167. *f.* 4. ♀. *tab.* 182. *f.* 1. ♂.—*Sow. Brit. Mis. tab.* 47. ♂.—*Don.* 12. 415. ♂.

Brassy green, abdomen thickened towards the apex, inferior anal appendages furcate in the male; stigma black; labium and spots on the underside of 2 or 3 of the basal abdominal segments ochreous.

This species has been taken from the end of May to July at Winandermere; near Wisbeach; in Starston and Costessey Woods, Norfolk; Martlesham Heath, Suffolk; Woodford; Epping Forest; Hampstead; near Beaulieu, Brockenhurst; and Pennington Commons, Hants. I have generally found it in plantations where there are fir-trees, in such situations as *Ca-lepteryx* frequents.

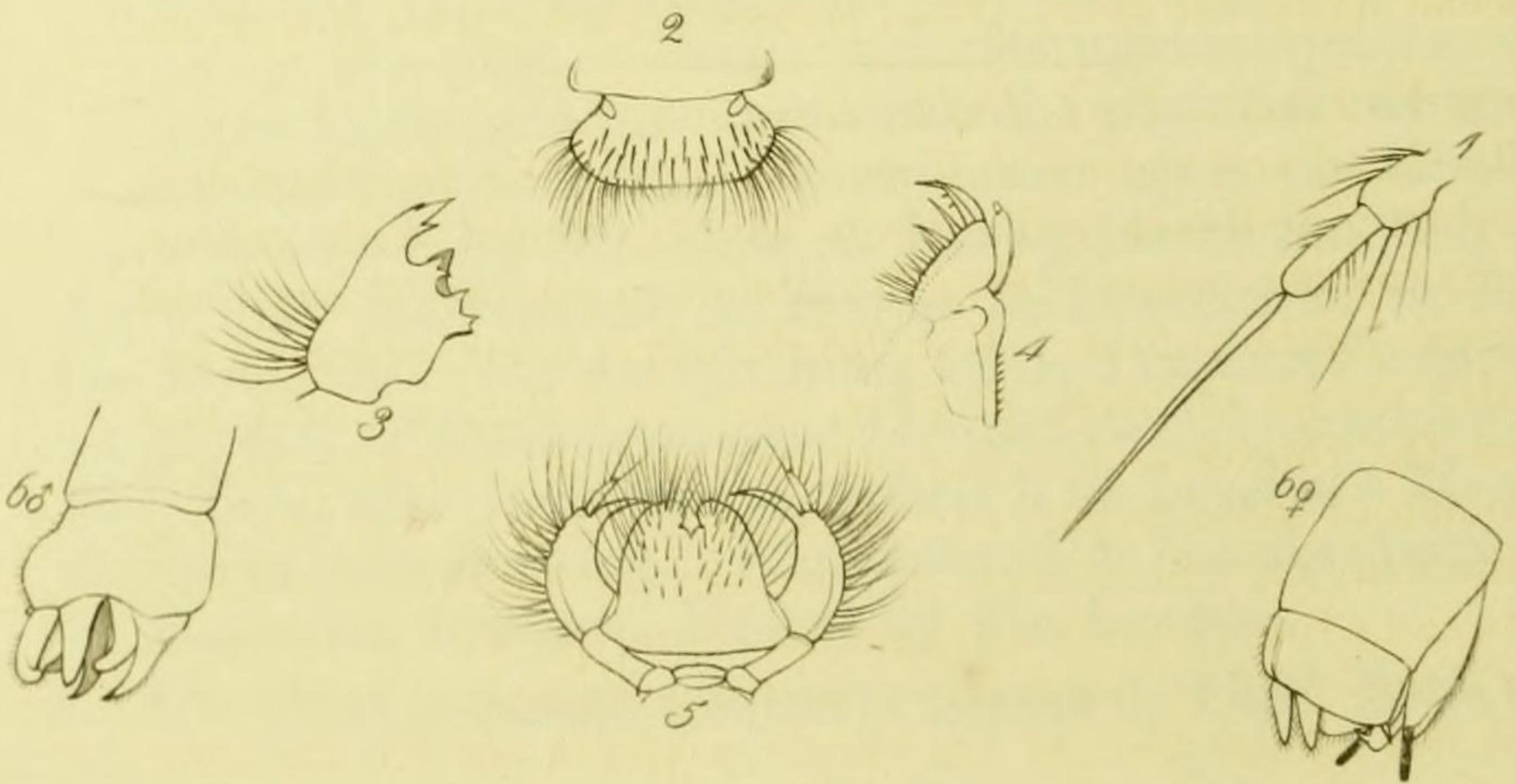
3. *Curtisii* *Dale.*—*Curt. Brit. Ent. pl.* 616. ♀.

Male glossy green, with ochreous pubescence; face bright green; base of the labrum and the labium ochreous; eyes pale pea-green, with a purple transverse stripe; back of the thorax ochreous, marked with black; abdomen compressed, with a line of yellow spots down the back, decreasing in length, forming 2 connected oval spots on each segment, the basal one being the largest, 7th and 8th segments with a pale margin only; wings of a very pale yellowish tint, with a small space at the base bright ferruginous; stigma, nervures and legs dark piceous; anterior thighs ochreous inside at the base. *Female* with ferruginous-yellow wings, softened into pale brown towards the posterior margin.

This fine species, which is unknown upon the Continent, was discovered by Mr. Dale on Parley Heath the 29th June, 1820, and subsequently at Hurne in Dorsetshire as late as the 16th July. On the 8th June, 1831, I captured a specimen on the side of Ramsdown near Heron Court, in company with Mr. Dale, who soon after described it in Loudon's Magazine under its present name. I understand it has also been taken on Braunton Burrows, Devon, by Mr. Cocks.

The plant is *Luzula* (*Juncus*) *campestris*, Field Rush.

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Publ. by J. Curtis Mar. 1. 1830

AGRION RUBELLUM.

ORDER Neuroptera.

FAM. Libellulidæ.

*Type of the Genus, Libellula puella, Linn.*AGRION *Fab., Lat., Vand. Lind., Curt.*—*Libellula Linn.*

Antennæ inserted between the eyes close to the inner margin, very remote, shorter than the head, triarticulate, basal joint the stoutest, subovate, 2nd not so stout but longer, a little globose at the apex, both with very long hairs, 3rd a moderately long seta, stoutish and tapering (1).

Labrum large, transverse-ovate, thickly clothed with long hairs (2).

Mandibles rather small, broad at the base, subtrigonal, the apex acute, trifurcate, with 2 clusters of teeth on the inside (3).

Maxillæ small, forming a compressed lobe, terminated by a long curved claw, with 2 teeth on the inside, 3 long spines below, the rest producing hairs; *external lobe* or *palpus* compressed, curved and hairy, with a small tubercle or joint at the apex (4).

Mentum short but broad. *Labium* large hairy and covering the mouth, ovate-trigonal, the apex rounded, with a deep broad notch in the centre. *Palpi* very hairy, biarticulate, basal joint very large, curved, compressed, a little attenuated, furnished with a long incurved claw at the inner apical angle, 2nd joint slender, a little curved, subelliptic (5).

Head *broad*: clypeus *narrowed*: eyes *moderate, very remote, prominent and ovate*: ocelli 3, *forming a triangle on the crown*. Thorax *narrower than the head, obconic-truncate*: collar *forming a lunate scale*: alitrunk *very short and nearly vertical*. Abdomen *long slender and cylindrical, the apical processes very short and varying greatly in form*; male *furnished with 2 short remote horny lobes above, and a furcate one on each side below* (6 ♂); female *with 2 short teeth and 2 filiform processes below* (6 ♀). Wings *erect in repose, very similar, membranaceous, elongate-ovate, most of the cells quadrangular*: stigma *small and rhomboidal*. Legs *rather short, slender, tapering, anterior the shortest*: thighs *with two rows of spiny bristles beneath*: tibiæ *with a double series of spreading spiny bristles on each side, the anterior pectinated inside towards the apex*: tarsi *triarticulate, basal joint very short, 3rd the longest in the anterior, in the others the 2nd and 3rd are equal*: claws *long narrow and bifid at the apex*. Obs. *the dissections are from A. minium.*

RUBELLUM *V. Lind.,—Curt. Guide, Gen. 733, 7.*

Male: head and thorax dull æneous, underside face and legs ochreous: abdomen red: wings slightly tinted with yellow, stigma fuscous-ochre. *Female*: abdomen æneous, 3 basal and 2 apical joints rufous. *Var.* bright ferruginous, ochreous beneath; crown of head, clypeus, disc of collar, a broad line down the thorax and a fine one on each side purplish-black; abdomen of same colour, except the 2 first joints, and the base of the 3rd, on which there is a broken dorsal line of 4 black spots and a ring; base of all the other segments with an ochreous ring interrupted at the centre: nervures sometimes reddish: a black dot at the apex of the thighs, a streak outside the tibiæ and tips of tarsi and of claws black.

THESE elegant and beautiful insects, which are distinguished from cognate genera by their rhomboidal stigma, are abundant in June and July in marshes, the sides of rivers, ponds, ditches, hedges, &c., where they fly about sedges, reeds, rushes, and other aquatic plants, on which they often settle. The French have given them the trivial name of Demoiselle, but with us they bear the formidable appellation of Dragon-flies, which they in some measure deserve, as, like the rest of the Libellulidæ, they feed upon other insects, both in the larva and imago states. It will be seen by the following list, that there are many species, the sexes of which not only differ, but from some cause or other individuals vary so much in colour, that it is a difficult task sometimes to determine to which species a variety belongs, and I think it not improbable that some of these may be hybrids. The caudal appendages of the males vary so greatly, that Charpentier thinks they will supply good specific characters.

1. Platypoda *Van. Lind.*—*Schæff. Icon. t. 48. f. 1. β.*—*Corea Lea.*—*lacteam Charp.*

This species has the 4 hinder tibiæ dilated: it is found in Norfolk, the New Forest, and in Devonshire.

2. Chloridion *Charp. Hor. Ent. p. 14 ?*—*Schæf. t. 121. f. 4 ♂. f. 5 ♀.*—*Röesel. v. 2. t. 11. f. 6.*

June, Lincolnshire, on the authority of the “Illustrations.”

3. fulvipes *Step.*—June, Coomb Wood.

4. rufescens *Lea.*—This and the following species, excepting Nos. 10. & 15. have been found in the vicinity of London.

5. minium *Harris, Expo. t. 29. f. 2 ♂. f. 1 ♀.*—*Charp.*—*sanguineum Van. L.*—*Schæf. t. 116. f. 1 ♂.*

6. annulare *Lea.*

7. furcatum *Charp. p. 18.*

8. hastulatum *Charp. p. 20 ?*—*Schæf. t. 120. f. 5 ♂. f. 6 ♀.*
Is a var. of the next according to Vander Linden.

9. Puella *Linn.*—*Röesel. 2. tab. 11. f. 7 ♂.*—*Schæf. t. 117. f. 1 ♀.*—*Harris, Expo. t. 29. f. 4 ♂. f. 3 ♀ ?*

10. pulchellum *Van. L.*—*Schæf. t. 120. f. 4 ♀.*

June, Cosmore Common, near Glanville’s Wootton, Mr. Dale.

11. zonatum *Leach.*

12. xanthopterum *Ste.*

13. elegans *Van. L.*

14. ezonatum *Ste.*

15. rubellum *Van. L.*—*Curt. B. E. pl. 732 ♀. var.*—*rufipes Dale.*

Taken by Mr. Dale on Parley Heath in July and August: the specimen figured appears to be a fine variety of Vander Linden’s insect, and I believe it is the true *rufipes* of Dale.

Illecebrum verticillatum, Whorled Knott-grass, from specimens collected in bogs near the Land’s End by Mr. William Branch, was communicated by J. Janson, Esq.